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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,420	05/05/2006	Kouji Kametaka	6340-000072/US/NP	1683
27572 7590 02/15/2011 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER WAITS, ALAN B	
			ART UNIT 3656	PAPER NUMBER
			MAIL DATE 02/15/2011	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,420	<b>Applicant(s)</b> KAMETAKA ET AL.	
	<b>Examiner</b> ALAN B. WAITS	<b>Art Unit</b> 3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-13 is/are pending in the application.
- 4a) Of the above claim(s) 9-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7, 8 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Request for Continued Examination***

1. The request filed on 6/16/2010 for a Continued Examination (RCE) is accepted and a continued prosecution application has been established. An action on the RCE follows.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Toda US 2003/0072511.

Toda teaches a similar bearing unit comprising:

#### **Re clm 7 and 13**

- An inner member (1, fig 1) including a wheel hub (2, fig 1) having a integrally formed wheel mounting flange (2c, fig 1) at one end and a cylindrical portion (2a, fig 1) axially extending from the wheel mounting flange
- An inner ring (32, fig 1) fitted on the cylindrical portion
- An outer member (33, fig 1) arranged around the inner member
- Double row rolling elements (38 and 39, fig 1) freely rollably contained between the inner and outer members

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- The inner ring being secured in an axial direction relative to the wheel hub by a caulked portion (32a, fig 1)
- A chamfered (32b, fig 3) surface on a radially outermost circumferential surface of the back side of the inner ring

The limitations:

- Said caulked portion formed by radially outwardly deforming the end of the cylindrical portion of the wheel hub
- A chamfered surface on a radially outermost circumferential surface of the back side of the inner ring is recut providing the chamfered surface to reduce stress concentrations due to gouges on the chamfered surface and to prevent the generation of cracks from the starting point of the gouge during previous working steps to uniformly distribute the stress concentration that would be caused by a hoop stress in the inner ring during the caulking operation

is a product-by-process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

3. Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazaki et al. USP 6280096.

Miyazaki discloses a similar bearing unit comprising:

**Re clm 7 and 13**

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- An inner member (2, fig 1) including a wheel hub having a integrally formed wheel mounting flange (6, fig 1) at one end and a cylindrical portion (8, fig 1) axially extending from the wheel mounting flange
- An inner ring (3, fig 1) fitted on the cylindrical portion
- An outer member (4, fig 1) arranged around the inner member
- Double row rolling elements (5, fig 1) freely rollably contained between the inner and outer members
- The inner ring being secured in an axial direction relative to the wheel hub by a caulked portion (19, fig 1)
- A chamfered (right, top end of 30, fig 3) surface on a radially outermost circumferential surface of the back side of the inner ring

The limitations:

- Said caulked portion formed by radially outwardly deforming the end of the cylindrical portion of the wheel hub
- A chamfered surface on a radially outermost circumferential surface of the back side of the inner ring is recut providing the chamfered surface to reduce stress concentrations due to gouges on the chamfered surface and to prevent the generation of cracks from the starting point of the gouge during previous working steps to uniformly distribute the stress concentration that would be caused by a hoop stress in the inner ring during the caulking operation

is a product-by-process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or

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obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

#### **Re clm 8**

- The wheel hub is formed with an inner raceway surface (7, fig 1) on its outer circumferential surface and said wheel hub outer circumferential region from a base of the wheel mounting flange to the cylindrical portion through the inner raceway surface is hardened by high frequency induction hardening to have a surface hardness of 54-64 HRC (col 7, ln 31-32)
- Said caulked portion remains as a non-quenched portion having a surface hardness of less than 24 HRC after forging (col 8, ln 27-29)

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toda US 2003/0072511 in view of Nonaka USP 6840722.

Toda discloses a similar bearing unit comprising:

#### **Re clm 7 and 13**

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- An inner member (1, fig 1) including a wheel hub (2, fig 1) having a integrally formed wheel mounting flange (2c, fig 1) at one end and a cylindrical portion (2a, fig 1) axially extending from the wheel mounting flange
- An inner ring (32, fig 1) fitted on the cylindrical portion
- An outer member (33, fig 1) arranged around the inner member
- Double row rolling elements (38 and 39, fig 1) freely rollably contained between the inner and outer members
- The inner ring being secured in an axial direction relative to the wheel hub by a caulked portion (32a, fig 1)
- A chamfered (32b, fig 3) surface on a radially outermost circumferential surface of the back side of the inner ring

The limitations:

- Said caulked portion formed by radially outwardly deforming the end of the cylindrical portion of the wheel hub
- A chamfered surface on a radially outermost circumferential surface of the back side of the inner ring is recut providing the chamfered surface to reduce stress concentrations due to gouges on the chamfered surface and to prevent the generation of cracks from the starting point of the gouge during previous working steps to uniformly distribute the stress concentration that would be caused by a hoop stress in the inner ring during the caulking operation

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is a product-by-process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Toda does not specifically disclose:

- The chamfer surface is recut

Nonaka teaches machining an element where a surface is formed as a cut surface and then recutting the surface to debur the surface (col 13, ln 21-29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Toda and provide:

- The chamfer surface is recut

for the purpose of deburring the surface.

6. Claims 7, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki USP 6280096 in view of Nonaka USP 6840722.

Miyazaki discloses a similar bearing unit comprising:

**Re clm 7 and 13**

- An inner member (2, fig 1) including a wheel hub having a integrally formed wheel mounting flange (6, fig 1) at one end and a cylindrical portion (8, fig 1) axially extending from the wheel mounting flange
- An inner ring (3, fig 1) fitted on the cylindrical portion
- An outer member (4, fig 1) arranged around the inner member
- Double row rolling elements (5, fig 1) freely rollably contained between the inner and outer members



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- The inner ring being secured in an axial direction relative to the wheel hub by a caulked portion (19, fig 1)
- A chamfered (right, top end of 30, fig 3) surface on a radially outermost circumferential surface of the back side of the inner ring

The limitations:

- Said caulked portion formed by radially outwardly deforming the end of the cylindrical portion of the wheel hub
- A chamfered surface on a radially outermost circumferential surface of the back side of the inner ring is recut providing the chamfered surface to reduce stress concentrations due to gouges on the chamfered surface and to prevent the generation of cracks from the starting point of the gouge during previous working steps to uniformly distribute the stress concentration that would be caused by a hoop stress in the inner ring during the caulking operation

is a product-by-process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Miyazaki does not disclose:

- The chamfer surface is recut

Nonaka teaches machining an element where a surface is formed as a cut surface and then recutting the surface to debur the surface (col 13, ln 21-29).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Toda and provide:

- The chamfer surface is recut

for the purpose of deburring the surface.

**Re clm 8**, Miyazaki further discloses:

- The wheel hub is formed with an inner raceway surface (7, fig 1) on its outer circumferential surface and said wheel hub outer circumferential region from a base of the wheel mounting flange to the cylindrical portion through the inner raceway surface is hardened by high frequency induction hardening to have a surface hardness of 54-64 HRC (col 7, ln 31-32)
- Said caulked portion remains as a non-quenched portion having a surface hardness of less than 24 HRC after forging (col 8, ln 27-29)

### ***Response to Arguments***

Applicant's arguments with respect to claims 7, 8 and 13 have been considered but are moot in view of the new ground(s) of rejection. Although prior art is the same for Miyazaki and Nonaka, the references have been interpreted differently from the previous rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN B. WAITS whose telephone number is (571)270-

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3664. The examiner can normally be reached on Monday through Friday 7:30 am to 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alan B Waits/  
Examiner, Art Unit 3656

/Richard WL Ridley/  
Supervisory Patent Examiner, Art Unit 3656